

Sky Scoop

Issue 11

Winter 2004

Points of Interest

- Update your spotter form
- July flooding
- What will winter bring this year?
- Winter Weather definitions
- When to call us during the winter weather season
- Tips for measuring snowfall
- Winter Weather safety tips

Inside this issue:

Important Winter Weather terms	2
July West Central Ohio Flooding	3
Hurricane Grace affects Ohio	4
2003 SKYWARN Recognition Day	5
2003-2004 Winter Weather Outlook	6
Update on NOAA NWR	7
Winter Weather Safety Tips	8-9
A Refresher for Measuring Snow	9
Update your spotter information	11

July Severe Weather

Robin L. Gerhardt

After a busy spring severe weather season, summer wasn't shaping up to be much different. More severe weather began to affect southwest Ohio, southeast Indiana and Northern Kentucky on the 4th of July. A frontal boundary across northern Ohio was the focus of thunderstorm development for almost a week. On the evening of July 4th, several severe thunderstorm and flood warnings were issued as a line of showers and thunderstorms pushed southeast. There were several reports of wind damage across the region including downed trees, power lines and power poles. A wind gust of 62 mph was measured at the National Weather Service Office in Wilmington. Several inches of rain fell across West Central Ohio causing flooding. 2 people were reported dead in Avondale, Ohio in Hamilton



Tree down in Columbus Ohio on July 7th.
Photo courtesy Ben Gelber.

county as a tree spilt and fell. Things quieted down as the line pushed south. Another round was in store for Saturday the 5th. More storms moved across the region during the early evening dumping more heavy rains along with damaging winds. More reports of downed trees, power lines and poles poured in from across the Tri State area and central Ohio. More flooding also occurred with West Central Ohio receiving more heavy rains. The action continued into Sunday, as the boundary refused to budge and remained almost stationary. As the region remained

in a moist and unstable atmosphere, flooding was again a problem in West central Ohio as thunderstorms dropped more heavy rain. There was wind damage reported in many parts of the Miami Valley and West Central Ohio. The system continued to plague the region as the new week began. More showers and thunderstorms continued to develop as the region remained in an unstable airmass and several upper air disturbances moved across the region. West Central Ohio was once again hit with heavy rain causing flooding problems. Several major roads were closed. Wind damage and flooding problems were also reported across the Whitewater Valley of Indiana. More storms rolled in later in the day affecting West Central Ohio and Central Ohio. A 62 mph wind gust was reported in Sunbury, Ohio.

July Severe Weather (continued)



Lake Loramie State Park under water. Photo courtesy www.shelbycountyweather.com.

The active weather continued to affect the Ohio Valley region into early Tuesday morning as another line of showers and thunderstorms pushed across the region, mainly affecting areas north of Cincinnati and Portsmouth. More wind damage reports flooded in with numerous trees and power lines down across the affected areas. There were more flooding problems in West Central Ohio as the storms once again contained heavy rains.

The region remained in the unstable air through the end of the week until a cold front pushed across the region on Friday July 11th, allowing drier and more stable air to filter in across the Ohio Valley.

Important Winter Weather Terms

Robin L. Gerhardt

With the winter season fast approaching, take a few minutes and familiarize yourself with the terms below. Being knowledgeable of these terms will help save lives this winter season.

Winter Storm Outlook-Issued prior to an official *Winter Storm Watch*. This is issued when forecasters believe winter storm conditions are possible. The outlook is usually issued 48-60 hours before the beginning of a winter storm.

Winter Storm Watch- Alerts the public to the potential for blizzard conditions, heavy snow, significant icing or a combination of these events. Watches are usually issued 12 to 36 hours before the beginning of a winter storm.

Winter Storm Warning- Issued when heavy snow, heavy freezing rain or heavy sleet is expected to occur, either alone or in combination. These are usually issued 6 to 24 hours before an event is expected.

Blizzard Warning-Issued for sustained or gusty winds of 35 mph or more and falling or blowing snow creating visibilities less than a quarter of a mile. These conditions should persist for at least 3 hours.

Winter Weather Advisory- Issued for accumulating snow, freezing rain, freezing drizzle and sleet which will cause inconvenience and moderately dangerous conditions.

Wind Chill Advisory- Issued when wind chill temperatures are expected to be -10° to -24° and wind speed is 10 mph or greater.

Wind Chill Warning- Issued when wind chill temperatures are expected to be -25° or below and wind speed is 10 mph or greater.

July Flooding Across West Central Ohio

Julie Dian-Reed

After June flooding that resulted in state disaster declarations in Butler and Preble counties, western Ohio was hit yet again by disastrous flooding in July. This time, the counties most devastated by heavy rain included Mercer, Darke, Auglaize, Logan and Shelby. A very wet and unstable weather pattern settled into the upper Miami valley and the St. Mary's river basin in Ohio and Indiana, beginning on the July 4th holiday. Through the holiday weekend, Logan county received over 4.5" of rainfall, with Ft. Loramie receiving about 6". Additional heavy rainfall through July 8th resulted in an estimated 10 to 12 inches of total rain for the total 4 day period across much of northern Mercer county and into Van Wert county.

For the month of July, the NWS radar estimated that much of Mercer county received anywhere from 10 to an estimated 20 inches of rainfall. To put that in perspective, total annual rainfall for that area of Ohio averages about 35 to 40 inches for the year. In Logan and Auglaize counties, an estimated 8 to 12 inches of rain fell through July, with 6" to 8" of that rain occurring during the 4 day period beginning July 4. Based on gage reports, it appears the radar estimated the rainfall pretty accurately, as the Celina observer reported 14.21 inches of rain, and Bellefontaine reported 10.13 inches of rain.

After repeated heavy rainfall, some of the areas hardest hit by river flooding included the St. Mary's river near Rockford and Celina near Grand Lake St. Mary's in Mercer county, Lakeview and Russells Point in Logan county. Water spilling out of Grand Lake St. Mary's closed state route 703 and U.S. 127, as well as surrounded a radio station which serves the area. Numerous homes were evacuated in Rockford, with volunteers working to fill sandbags for numerous other homes. In Mercer county, 240 homes were affected by flood waters. While there is not a long term river gage in Ohio along the St. Mary's river, the St. Mary's river in Decatur, IN (downstream of Mercer/Van Wert counties) reached a record crest of 26.9' on the morning of July 9. This exceeded the previous record of 26.5' which occurred during the great Ohio flood of March 1913.



Flooding across Celina in Mercer county. Photo Courtesy www.whiotv.com.



Bridge over the St. Mary's River almost completely submerged . Photo Courtesy www.whiotv.com.

In the counties impacted, several hundred homes and businesses sustained major damage, with dozens completely destroyed. In addition to structural damage, damage occurred to state and county roads and bridges. A federal disaster was declared on July 15 through the affected areas. While the impact of the heavy rain was disastrous, because it was split between 2 major river basins (the St. Mary's and Great Miami), the resulting flooding was slightly less than if all the rain had fallen over only one of the basins. Along the Great Miami river, Logan, Shelby and Miami counties experienced the most widespread flooding. Near Indian Lake, homes were evacuated in Russels Point and Lakeview. Port Jefferson in Shelby county experienced the most extreme flooding, with homes also impacted in Jackson Center.

Hurricane Grace Impacts Ohio

Mike Ryan

Flooding rains plagued the region over Labor Day weekend. The remnants of Hurricane Grace, combined with a stationary frontal boundary across the Ohio Valley, contributed to heavy rains on Friday night, then again Sunday night into Labor Day. Many locations received three to four inches over the entire weekend, with portions of west central and central Ohio seeing as much as eight inches. Three to four inches fell across the Columbus metropolitan area late Friday night into early Saturday, flooding roads and underpasses and causing several creeks on the east side of town to rise out of their banks. The reporting station at Port Columbus Airport received 3.72 inches, giving the station a monthly total of 11.42 inches, a new August record and the second wettest month ever recorded in Columbus. Heavy rains returned Sunday night and continued throughout the day Monday. Two to four inches fell across the region. The heaviest rains occurred in west central Ohio and the Whitewater Valley, leading to numerous flooded roads and basements. Up to fifteen homes in Darke County sustained minor damage due to high water.

2003 SKYWARN Recognition Day

Robin L. Gerhardt

On December 6, 2003, the National Weather Service in Wilmington, Ohio participated in the 2003 SKYWARN National Recognition Day. The event began at 7 pm on Friday December 6, and ended at 7 pm on December 7. The day celebrates the contributions that volunteer SKYWARN radio operators make to the National Weather Service. During the day, SKYWARN operators visited participating NWS offices and contacted other radio operators across the world. There were 116 National Weather Service offices registered to participate in the event. But, due to a major snowstorm along the east coast, some office did not operate. The event was developed in 1999 by the National Weather Service and the American Radio Relay League (ARRL).

SKYWARN radio operators began arriving at the Wilmington, Ohio office on Friday afternoon to set up their equipment. Operators from Wilmington, Columbus and Cincinnati participated. Overall, the operators made a total of 374 contacts, which included 46 states and 70 National Weather Service offices. Seven countries were contacted including Argentina, Canada, France, Panama, Portugal, Puerto Rico and the United States.

NWS Offices contacted

- Aberdeen, SD
- Amarillo, TX
- Billings, MT
- Birmingham, AL
- Bismarck, ND
- Boston, MA
- Boulder, CO
- Brownsville, TX
- Buffalo, NY
- Caribou, ME
- Charleston, SC
- Charleston, WV
- Cheyenne, WY
- Chicago, IL
- Corpus Christi, TX
- Davenport, IA
- Des Moines, IA
- Duluth, MN
- El Paso, TX
- Fortworth, TX
- Gaylord, MI
- Glasgow, MT
- Goodland, KS
- Grand Forks, ND
- Grand Junctions, CO
- Grand Rapids, MI
- Great Falls, MT
- Greenville, SC
- Hastings, NE
- Jackson, MS
- Jacksonville, FL
- Kansas City, MO
- Lacrosse, WI
- Lake Charles, LA
- Lincoln, IL
- Little Rock, AR
- Lubbock, TX
- Marquette, MI
- Melbourne, FL
- Milwaukee, WI
- Minneapolis, MN
- Missoula, MT
- Morristown, TN
- Mt. Holly, NJ
- Nashville, TN
- NHC
- Newport, NC
- North Platte, NE
- Omaha, NE
- Peachtree City, FL
- Pleasant Hill, MO
- Pocatello, ID
- Pueblo, CO
- Raleigh, NC
- Rapid City, IA
- Reno, NV
- Riverton, WY
- Ruskin, FL
- San Juan, PR
- Slidell, LA
- Spokane, WA
- Springfield, IL
- St. Louis, MO
- Sterling, VA
- SPC
- Syracuse, IN
- Topeka, KS
- Wakefield, VA



Radio equipment set up in the National Weather Service conference room in Wilmington, Ohio. Photo courtesy Paul Gehringer.



Operator WB8MCX making a contact to other operators across the world. Photo courtesy Paul Gehringer.



A "behind the scenes" look at the set up in the conference room. Photo courtesy Paul Gehringer.



Operator KA8ZNY working at the 40 meters 'Hunt' radio on Saturday afternoon. Photo courtesy Paul Gehringer.



Operators N8YMN and KB8LZK working the 'Spotting Radio' toward the end of the event. Photo courtesy Paul Gehringer.



An operator making a contact using the latest in technology. Photo courtesy Paul Gehringer.

Winter Outlook 2003-2004

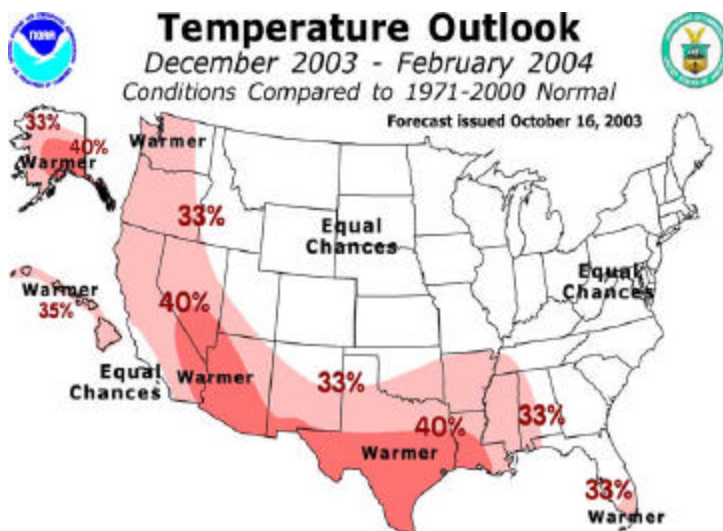
Scott F. Hickman

The leaves have fallen. There is a chill in the air. Snowflakes have already fallen to the ground. Children will be full of joy with the possibility of school closings. Adults will become anxious in anticipation of winter driving hazardous. All want to know: What will this winter be like? . This year, the National Weather Service's Climate Prediction Center (CPC) has given the Ohio Valley Region equal chances of a cold, snowy winter versus a warmer, wet winter. The indifference in the forecast for our region is due to the lack of a strong El Niño (warmer than normal ocean water) or La Niña (colder than normal ocean water) signal. Recently, the equatorial waters in the Pacific Ocean were slightly warmer than normal, indicating that a weak El Niño was forming. Even so, senior meteorologist Ed O'Lenic of CPC emphasized that, El Niño is

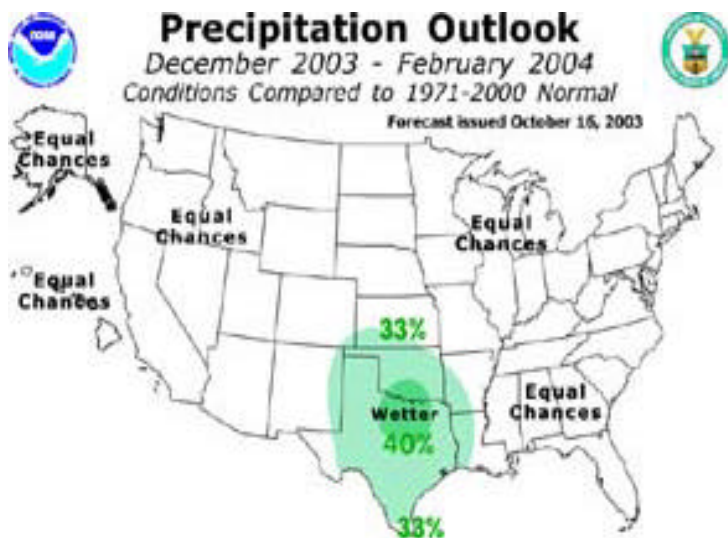
not expected to exert a major influence on the U. S. climate this winter. Also, as we saw last year, other atmospheric oscillations, such as the North Atlantic Oscillation (NAO), could very well throw a "monkey wrench" to the entire winter prediction. As we discussed last fall, a negative NAO results in a weaker than normal subtropical high near the Azores and a weaker than normal low near Iceland . The much weaker

pressure gradient or blocking pattern allows cold air to flow into the eastern United States. Hence, there is a higher probability of a snowier winter. This pattern is transitory, and thus it can be very difficult to forecast.

Whatever the outcome this winter, we at the National Weather Service hope you stay safe. Remember to winterize your car and carry essential winter gear such as a hat, blanket, gloves, and non perishable foods with you as you travel. Refresh your memory on winter weather safety tips by reading the article pages 8-9. Watch for the next issue of Sky Scoop in the spring of 2004, where we will summarize the winter of 2003-2004.



Temperature outlook for Winter 2004. Image courtesy www.cpc.noaa.gov.



Precipitation outlook for Winter 2004. Image courtesy www.cpc.noaa.gov.



For more on winter weather safety, check out the State of Ohio EMAs Winter Weather Awareness page at <http://www.state.oh.us/odps/division/ema/PDFs/Winter2003.pdf>

Update on NOAA Weather Radios

Sam McNeil

The NOAA Weather Radio (NWR) is a nationwide network of over 800 radio stations broadcasting continuous weather information. In the WFO Wilmington County Warning Area (CWA) there are eight (8) broadcast stations with transmitters located in parts of southwest Ohio, southeast Indiana and northern Kentucky.. They are as follows:

Cridersville OH.	WXJ-93	162.400 MHz
Columbus OH.	KIG-86	162.550 MHz
Miamisburg OH.	WXJ-46	162.475 MHz
Covington KY.	KIH-42	162.550 MHz
Otway OH.	WXM-69	162.525 MHz
Owenton KY.	KZZ-48	162.450 MHz
Maysville KY.	KZZ-49	162.425 MHz
Richmond IN.	KHB-52	162.500 MHz

Warnings, watches, forecasts and other hazardous and non-hazardous information are broadcast over the NWR. New and improved voices to broadcast text product information over the NWR have continued to be used with the voices becoming more understandable and human sounding since 1997. Currently, a male and female voice (Craig and Donna) are being used and have received favorable responses from our customers. We encourage the public to contact our office with suggestions and input that will lead to providing a better service. The Next Generation of the NOAA Weather Radio - Console Replacement System is at full speed to further improve a concatenated voice.

This year upgrades to boost the power of radio transmitters, reduction of maintenance down time and the capability for emergency backup generators have been installed across Wilmington's County Warning Area at Cridersville, Miamisburg and Otway Ohio and at the Cincinnati/Covington site. Other state and federal agencies (i.e. Ohio Emergency Management Agency and the United States Department of Agriculture) have joined with the National Weather Service to help fund further installations of the NOAA Weather Radio transmitters across Ohio.

During the months of June, July and some of September 2003 we saw a very active period of severe thunderstorms, tornadoes and flooding rains. The voice of the National Weather Service, the NOAA Weather Radio, was very busy at work as many watches and warnings were broadcasted. During this winter season, we want to assure you that the National Weather Service, through the NOAA Weather Radio, will continue to provide you with the latest updated forecasts and warnings.

The purchase of a weather radio could be one of the best investments you can make. Feel free to visit the web site www.nws.noaa.gov/er/iln or www.nws.noaa.gov/nwr for weather radio information.

2004 Spotter Talks are Approaching!!!

Spotters talks will begin at the end of January 2004. The schedule is posted on our website <http://www.erh.noaa.gov/iln/> soon. Check for updates. This year we have a brand new spotter presentation!

Winter Weather Safety Tips

Robin L. Gerhardt

Winter Storms are often referred to as deceptive killers because most deaths are indirectly related to the storm. Many deaths are caused by traffic accidents or prolonged exposure to the cold. There are several ways to be prepared for a winter storm before it strikes.

At home and work

Primary concerns are the potential loss of heat, power, telephone service, and a shortage of supplies if storm conditions continue for more than a day.

Have available:

- Flashlight and extra batteries.
- Battery-powered NOAA Weather Radio and portable radio to receive emergency information. These may be your only links to the outside.
- Extra food and water. High energy food, such as dried fruit or candy, and food requiring no cooking or refrigeration is best.
- Extra medicine and baby items.
- First-aid supplies.
- Heating fuel. Fuel carriers may not reach you for days after a severe winter storm.
- Emergency heating source, such as a fireplace, wood stove, space heater, etc.
 - Learn to use properly to prevent a fire.
 - Have proper ventilation.
- Fire extinguisher and smoke detector.
 - Test units regularly to ensure they are working properly.

In Automobiles

Plan your travel and check the latest weather reports to avoid the storm!

- Fully check and winterize your vehicle before the winter season begins.
- Carry a WINTER STORM SURVIVAL KIT:
 - blankets/sleeping bags;
 - flashlight with extra batteries;
 - first-aid kit;
 - knife;
 - high-calorie, non-perishable food;
 - extra clothing to keep dry;
 - a large empty can and plastic cover with tissues and paper towels for sanitary purposes;
 - a smaller can and water-proof matches to melt snow for drinking water;
 - sack of sand (or cat litter);
 - shovel;
 - windshield scraper and brush;
 - tool kit;
 - tow rope;
 - booster cables;
 - water container;
 - compass and road maps.
- Keep your gas tank near full to avoid ice in the tank and fuel lines.
- Try not to travel alone.
- Let someone know your timetable and primary and alternate routes.

Winter Weather Safety Tips (continued)

Robin L. Gerhardt

On a Farm

- Move animals to sheltered areas. Shelter belts, properly laid out and oriented, are better protection for cattle than confining shelters, such as sheds.
- Have a water supply available. Most animal deaths in winter storms are from dehydration.

Other Helpful Tips...

- Wear loose-fitting, light-weight, warm clothing in several layers. Trapped air insulates. Layers can be removed to avoid perspiration and subsequent chill. Outer garments should be tightly woven, water repellent, and hooded. Wear a hat. Half your body heat loss can be from the head. Cover your mouth to protect your lungs from extreme cold. Mittens, snug at the wrist, are better than gloves. Try to stay dry.
- AVOID OVEREXERTION, such as shoveling heavy snow, pushing a car, or walking in deep snow. The strain from the cold and the hard labor may cause a heart attack. Sweating could lead to a chill and hypothermia.

The above tips were taken from <http://www.nws.noaa.gov/om/brochures/wnttrstm.htm>, put together by the National Weather Service, the American Red Cross and the Federal Emergency Agency. For full list of weather safety tips go to <http://www.nws.noaa.gov/om/brochures.shtml>.

A Refresher for Measuring Snow

Robin L. Gerhardt

Measuring snow may seem easy, but by following these simple tips, you can avoid unwanted errors.

1. Avoid grassy surfaces. Grassy surfaces are uneven, and this may lead to inaccurate amounts.
2. Measure snow on a flat surface. A flat piece of wood painted white is ideal as this method helps reflect the sun's rays.
3. Choose locations in the shade, away from buildings. This reduces the amount of melting that may occur.
4. Avoid locations susceptible to blowing and/or drifting of snow. Sometimes this is unavoidable, but do the best that you can.
5. During a snow event, clear off a portion of your measuring area so that you can calculate the amount of snow that has fallen when you take a later measurement.
6. When calculating snow depth, take an average of several depths within your measuring area. Snow can settle, melt and evaporate, so an average of several readings will give a more accurate depth.



WILMINGTON NWS SNOWFALL REPORTER APPLICATION

We are looking for spotters who are willing to call in snowfall reports after every winter event. We will select spotters based on location to try and get a representative view of snowfall across our area.

Name _____

County of Residence _____

Sector of County (NW, SE, etc.) _____

Distance and Direction of your residence from the nearest city, town or U. S. , state or county highway.

Email Address _____

Do you own a rain gauge? Y N

Winter is here!!!!
Remember to report the following
weather to the
 
 **National Weather Service:**

- *Two inches or more of new snowfall*
- *One inch or more of snow an hour*
- *Freezing rain or freezing drizzle*
- *Thundersnow*



WILMINGTON NWS SKYWARN SPOTTER REGISTRATION

Name _____

County of Residence _____

Do you need a new ID Card? _____

ONLY FILL OUT PARTS OF SHEET WITH NEW INFORMATION (JUST FILL IN SECTIONS THAT HAVE CHANGED)

If your address has changed, what was your previous county of residence?

Mailing Address _____

street address and/or PO Box

apt # (if any)

city

state

zip

Distance and Direction of your residence from the nearest city, town or U. S. , state or county highway.

Email Address _____

May we call you for verification of suspected severe or hazardous weather events? **Y** **N**

Telephone ____ (____) _____

* Give times we can call, otherwise we will assume that we can call *anytime day or night*.

Times: From _____ to _____

Affiliation, if any?

Amateur Radio (with Call Sign) _____

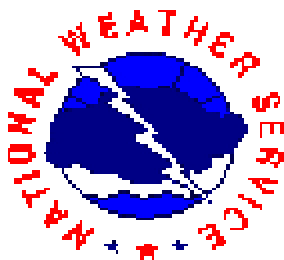
Emergency Management/Law Enforcement _____

Fire/Rescue Squad _____

Do you own any of the following weather observing equipment?

Electronic weather station _____

Rain Gauge _____



**National Weather Service
1901 South State Route 134
Wilmington, Ohio 45177**

www.erh.noaa.gov/er/iln